

MARKED-UP VERSION OF TRANSLATION OF
ARTICLE 19 AMENDMENT

CLAIMS

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1. A glass substrate having a primer layer that is formed thereon and comprises a hydrolysis product of a hydrolysable silicon compound having an alkylene group and a hydrolysis product of a hydrolysable zirconium compound or hydrolysable titanium compound, the glass substrate being characterized in that, in the primer layer, zirconium is in an amount by weight ratio of 0.0002 times to 0.0025 times that of silicon, or titanium is in an amount by weight ratio of 0.0005 times to 0.0045 times that of silicon.

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2. A glass substrate according to claim 1, which is characterized in that the primer layer has a thickness of from about 1nm to about 10nm.

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3. An anti-fogging article comprising a resin film that exhibits water-absorptive property and/or hydrophilic property and is formed on the primer layer of the glass substrate according to claim 1.

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4. An anti-fogging article according to claim 3, which is characterized in that a resin of the resin film is selected from the group consisting of urethane resins, acrylic resins, epoxy resins, olefinic resins, nylon resins, polyethylene terephthalate, polyethylene, vinyl chloride resins, polyvinyl alcohol, and polycarbonate.

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5. An anti-fogging article according to claim 4, which is characterized in that the resin of the resin film is a urethane resin.

6. An anti-fogging article according to claim 4, which is characterized in that the resin of the resin film is a urethane resin obtained from a raw material comprising a surfactant having an isocyanate reactive group.

5 7. An anti-fogging article according to claim 4, which is characterized in that the anti-fogging article has at least water-absorptive property.

8. A washing method, which is characterized in that an alkali solution is used in a method for washing the anti-fogging article according to claim 3.

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9. A coating liquid for obtaining the primer layer according to claim 1, the coating liquid being characterized in that it comprises a hydrolysable silicon compound and/or hydrolysate having an alkylene group, and a hydrolysable zirconium compound and/or hydrolysate or a hydrolysable titanium compound and/or hydrolysate and that it has a pH value of 2 or lower.

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10. A coating liquid according to claim 9, which is characterized in that the hydrolysable silicon compound having an alkylene group is selected from the group consisting of monomethylsilanol, dimethylsilanol, trimethylsilanol, silanol(tetrahydroxysilane), monoethylsilanol, diethylsilanol, triethylsilanol, 20 monopropylsilanol, dipropylsilanol, tripropylsilanol, triisopropylsilanol, diphenylsilane diol, 3-glycidoxypropyltrimethoxysilane, 2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane, aminopropyltriethoxysilane, and N-phenyl-3-aminopropyltrimethoxysilane.

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11. A coating liquid according to claim 10, which is characterized in that the hydrolysable silicon compound is aminopropyltriethoxysilane.

12. A coating liquid according to claim 9, which is characterized in that the hydrolysable zirconium compound is selected from the group consisting of

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zirconium oxychloride, zirconium nitrate, zirconium acetate, and alkoxide compounds.

13. A coating liquid according to claim 12, which is characterized in that
5 the hydrolysable zirconium compound is zirconium oxychloride.

14. A coating liquid according to claim 9, which is characterized in that the
hydrolysable titanium compound is selected from the group consisting of
titanium oxychloride, titanium nitrate, titanium acetate, and alkoxide
10 compounds.

15. A coating liquid according to claim 14, which is characterized in that
the hydrolysable titanium compound is titanium oxychloride.

15 16. (Amended) A coating liquid according to claim 9, which is
characterized in that the coating liquid according to claim 8 9 further
comprises a solvent, and that the total amount of the silicon compound and the
zirconium compound or titanium compound is 1.0wt% to 1.4wt% relative to the
solvent.

Statement under Article 19(1)

In the amendment of claim 16, "8" on line 1 of claim 16 was changed to "9".

請求の範囲

- [1] アルキレン基を有する加水分解性ケイ素化合物の加水分解生成物、及び加水分解性ジルコニウム化合物又は加水分解性チタニウム化合物の加水分解生成物からなるプライマー層が形成されたガラス基材であり、前記プライマー層において、ジルコニウムがケイ素に対して、重量比で0.0002倍量以上0.0025倍量以下、又はチタニウムがケイ素に対して重量比で0.0005倍量以上0.0045倍量以下であることを特徴とするガラス基材。
- [2] 前記プライマー層が約1nm乃至約10nmの厚みを有することを特徴とする請求項1記載のガラス基材。
- [3] 請求項1に記載のガラス基材のプライマー層上に吸水性及び／又は親水性を呈する樹脂被膜が形成された防曇性物品。
- [4] 前記樹脂被膜の樹脂がウレタン樹脂、アクリル樹脂、エポキシ樹脂、オレフィン樹脂、ナイロン樹脂、ポリエチレンテレフタレート、ポリエチレン、塩化ビニル樹脂、ポリビニルアルコール及びポリカーボネートのみから成る群から選択されることを特徴とする請求項3記載の防曇性物品。
- [5] 前記樹脂被膜の樹脂がウレタン樹脂であることを特徴とする請求項4記載の防曇性物品。
- [6] 前記樹脂被膜の樹脂が、イソシアネート反応性基を有する界面活性剤を含む原料から得られたウレタン樹脂であることを特徴とする請求項4記載の防曇性物品。
- [7] 防曇性物品が少なくとも吸水性を有することを特徴とする請求項4記載の防曇性物品。
- [8] 請求項3に記載の防曇性物品を洗浄する方法において、アルカリ性の溶液を用いることを特徴とする洗浄方法。
- [9] 請求項1に記載のプライマー層を得るための塗布液であり、アルキレン基を有する加水分解性ケイ素化合物及び／又は加水分解物、及び加水分解性ジルコニウム化合物及び／又は加水分解物、又は加水分解性チタニウム化合物及び／又は加水分解物を有し、pH値が2以下であることを特徴とする塗布液。
- [10] アルキレン基を有する加水分解性ケイ素化合物がモノメチルシラノール、ジメチルシ

ラノール、トリメチルシラノール、シラノール(テトラヒドロキシシラン)、モノエチルシラノール、ジエチルシラノール、トリエチルシラノール、モノプロピルシラノール、ジプロピルシラノール、トリプロピルシラノール、トリイソプロピルシラノール、ジフェニルシランジオール、3-グリシドキシプロピルトリメトキシシラン、2-(3,4-エポキシシクロヘキシル)エチルトリメトキシシラン、アミノプロピルトリエトキシシラン、及びN-フェニル-3-アミノプロピルトリメトキシシランのみから成る群から選択されることを特徴とする請求項9記載の塗布液。

- [11] アルキレン基を有する加水分解性ケイ素化合物がアミノプロピルトリエトキシシランであることを特徴とする請求項10記載の塗布液。
- [12] 加水分解性ジルコニウム化合物がオキシ塩化ジルコニウム、硝酸ジルコニウム、酢酸ジルコニウム、及びアルコキシド化合物のみから成る群から選択されることを特徴とする請求項9記載の塗布液。
- [13] 加水分解性ジルコニウム化合物がオキシ塩化ジルコニウムであることを特徴とする請求項12記載の塗布液。
- [14] 加水分解性チタニウム化合物がオキシ塩化チタニウム、硝酸チタニウム、酢酸チタニウム、及びアルコキシド化合物のみから成る群から選択されることを特徴とする請求項9記載の塗布液。
- [15] 加水分解性チタニウム化合物がオキシ塩化チタニウムであることを特徴とする請求項14記載の塗布液。
- [16] (補正後)請求項9記載の塗布液がさらに溶媒を含み、ケイ素化合物及びジルコニウム化合物又はチタニウム化合物の総量が、該溶媒に対して、1.0重量%乃至1.4重量%であることを特徴とする請求項9記載の塗布液。

条約第19条(1)に基づく説明書

請求の範囲第16項の補正では、請求の範囲第16項の第1行目の「8」を「9」に変更した。

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2. A glass substrate according to claim 1, which is characterized in that the primer layer has a thickness of from about 1nm to about 10nm.

3. An anti-fogging article comprising a resin film that exhibits water-absorptive property and/or hydrophilic property and is formed on the primer layer of the glass substrate according to claim 1.

4. An anti-fogging article according to claim 3, which is characterized in that a resin of the resin film is selected from the group consisting of urethane resins, acrylic resins, epoxy resins, olefinic resins, nylon resins, polyethylene terephthalate, polyethylene, vinyl chloride resins, polyvinyl alcohol, and polycarbonate.

5. An anti-fogging article according to claim 4, which is characterized in that the resin of the resin film is a urethane resin.

6. An anti-fogging article according to claim 4, which is characterized in that the resin of the resin film is a urethane resin obtained from a raw material comprising a surfactant having an isocyanate reactive group.

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7. An anti-fogging article according to claim 4, which is characterized in that the anti-fogging article has at least water-absorptive property.

8. A washing method, which is characterized in that an alkali solution is used in a method for washing the anti-fogging article according to claim 3.

9. A coating liquid for obtaining the primer layer according to claim 1, the coating liquid being characterized in that it comprises a hydrolysable silicon compound and/or hydrolysate having an alkylene group, and a hydrolysable zirconium compound and/or hydrolysate or a hydrolysable titanium compound and/or hydrolysate and that it has a pH value of 2 or lower.

10. A coating liquid according to claim 9, which is characterized in that the hydrolysable silicon compound having an alkylene group is selected from the group consisting of monomethylsilanol, dimethylsilanol, trimethylsilanol, silanol(tetrahydroxysilane), monoethylsilanol, diethylsilanol, triethylsilanol, monopropylsilanol, dipropylsilanol, tripropylsilanol, triisopropylsilanol, diphenylsilane diol, 3-glycidoxypropyltrimethoxysilane, 2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane, aminopropyltriethoxysilane, and N-phenyl-3-aminopropyltrimethoxysilane.

11. A coating liquid according to claim 10, which is characterized in that the hydrolysable silicon compound is aminopropyltriethoxysilane.

12. A coating liquid according to claim 9, which is characterized in that the hydrolysable zirconium compound is selected from the group consisting of zirconium oxychloride, zirconium nitrate, zirconium acetate, and alkoxide compounds.

13. A coating liquid according to claim 12, which is characterized in that the hydrolysable zirconium compound is zirconium oxychloride.

14. A coating liquid according to claim 9, which is characterized in that the hydrolysable titanium compound is selected from the group consisting of titanium oxychloride, titanium nitrate, titanium acetate, and alkoxide compounds.

15. A coating liquid according to claim 14, which is characterized in that the hydrolysable titanium compound is titanium oxychloride.

16. (Amended) A coating liquid according to claim 9, which is characterized in that the coating liquid according to claim 9 further comprises a solvent, and that the total amount of the silicon compound and the zirconium compound or titanium compound is 1.0wt% to 1.4wt% relative to the solvent.